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ABSTRACT

A study investigating differences between male and female sex role orientation and attitudes to changing sex roles tested two null hypotheses: (1) There will be no statistically significant difference between sex role orientation and sex role attitudes; and (2) regardless of sex role orientation, there will be no statistically significant difference between men's and women's sex role attitudes. Seven hundred thirty-nine vocational educators were contacted; 431 (58.32%) returned usable questionnaires. A subsample was selected and divided into a synergistic group (n=114) and a sex-typed group (n=110). Findings were that hypothesis 1 was partially rejected, as the two groups differed in their attitudes toward extrafamilial roles and male/female nature and behaviors. Hypothesis 2 was rejected as data clearly indicated that women, regardless of sex role orientation level, were significantly more nontraditional in their sex role attitudes. Conclusions were that efforts on the part of women who hold nontraditional attitudes might be a key factor in eliminating sex stereotyping in vocation education, but regardless of sex, sex role orientation is a predictor of behavior and what is needed is a group to initiate change in that area. Samples of questionnaires and inventories used in the study, along with tables of score correlations, are appended. (BL)

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The Pennsylvania State University

The Graduate School

Division of Occupational and Vocational Studies

Relationship between Sex Role Attitudes of Pennsylvania Vocational Educators and Their Stated Beliefs about Their Own Sex Role Orientation

A Thesis in

Home Economics Education

by

Jill A. Eversole

Submitted in Partial Fulfillment
of the Requirements
for the Degree of

Master of Science

November 1977

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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CHAPTER I

INTRODUCTION

The purpose of this study was to examine the sex role attitudes of vocational educators and their stated beliefs about their own sex role orientation. Katz and Kahn (1966) and Rokeach (1973) assert that a person's attitudes will influence his/her behavior. In the teacher/student relationship this can be a critical variable.

Several features distinguish this research from other studies on sex role attitudes and self-perception of sex role behaviors. First, sex role attitudes are measured in terms of both traditional and nontraditional ends. Second, the study involved attitudes toward the roles of both sexes. Third, sex role behaviors were observed on a scale of masculinity and femininity, noting similarities rather than differences. Last, sex role behaviors were measured for both males and females.

In an article concerning attitudes of male vocational educators, Gillie (1974) has noted, "The attitude toward professional women in vocational education remains chauvinistic." Steele (1974) states, "Unfortunately, the vision of educators still is clouded with the one option world for women, and education exhibits restraint in opening all programs to girls and women" (p. 44).

Background of the Study

There is a body of literature on socialization which concludes that such factors as familial/extra-familial roles and the social environment in which men and women are reared contribute to the development of their attitudes toward work (Maccoby and Jacklin, 1974). It was an assumption of this research project that vocational education teachers' attitudes play a role in preparing students of both sexes to take advantage of the expanded employment opportunities. Whether an individual chooses a traditional or nontraditional career, her/his choice should be respected and the person should be provided with the necessary resources to reach full potential in the areas of development preferred.

The focus of recent legislation (The Vocational Education and National Institute of Education Amendments of 1976) has been the elimination of sex stereotyping. In the world of work the data available about women's labor force participation indicate a particular need for equalizing opportunity. The working life of women has been expanding enormously over the past quarter of a century. It has been estimated that thirty-one years of a woman's seventy-four year life expectancy will be spent in the labor force. For this reason women should be encouraged to develop careers on a scale comparable to that of men.

Statistics show that current programs in vocational education do exhibit restraints in opening all programs to both men and women (Steele, 1974). Presently, vocational education appears to be a male-dominated profession, even though 49 per cent of the total vocational

education teachers are female and over half of the students in vocational education are females. It has been shown that female students in vocational education are reinforced and heavily influenced to enroll in occupations traditionally accepted by society as female appropriate. To the extent that vocational educators hold sex-stereotyped attitudes, it can be expected that equalization of opportunity for all vocational education students will be a process requiring efforts directed at the educators themselves.

Traditional or nontraditional conceptions of one's own sex role orientation plays a large part in developing attitudes and beliefs of individuals. In the past studies have described individuals as being masculine or feminine and those persons exhibiting both sex characteristics--perhaps the healthiest and best adjusted persons--were ignored (Bem, 1975c). Integrating the two and thereby creating an equilibrium between masculinity and femininity, each being tempered by the other, results in what Bem (1975c) refers to as an androgynous personality. The measurement of psychological androgyny now allows one to concentrate on masculine and feminine similarities rather than differences. This androgynous personality would exemplify the very best of what traditional masculinity (independent, assertive, ambitious) and traditional femininity (compassionate, loyal, understanding) have come to represent (Bem, 1975a). This study used Bem's integrative sex role orientation as a criterion variable in the examination of vocational educators' attitudes toward sex role changes.

CHAPTER II

A REVIEW OF THE LITERATURE

Very little is known about vocational education teachers' attitudes concerning changes in sex roles, particularly as they relate to the implications of recent legislation which may result in more women in traditionally male programs and vice versa. Knowledge of vocational educators' present attitudes and sex role orientation will facilitate the development of the teacher/student relationship, as well as broaden student learning.

The intent of this study is to determine the relationship between vocational education teachers' sex role attitudes and sex role orientation.

Sex Role Orientation

Traditionally, sex role identity has been dichotomized in terms of male or female behavior. Parsons and Bales (1955) refer to these domains as instrumental and expressive. The instrumental orientation has been connected with masculinity, task oriented; and the expressive orientation associated with femininity, affective and interpersonal. Bakan (1966) defines these domains similarly by labeling masculinity with agency and femininity with communion. In this context, agency refers to an individual who exhibits such characteristics as

self-sufficiency, self-assertion, and self-reliancy. Communion is associated with loyalty, understanding, and sensitivity.

One develops sex role identity as a young child. Children have been reinforced for displaying behavior expected from their own sex. Boys have been encouraged to be verbal and physically aggressive whereas girls are reinforced for being gentle and reserved (Maccoby, 1966; Osofsky and Osofsky, 1975; Pleck, 1975). Bem notes,

> Learning to be a "psychological" female or male is one of the earliest and most pervasive tasks imposed upon a child by his/her culture. It is a lesson which most children learn relatively well and at a very early age (Bem, 1975a, p. 2).

Studies consistently show that parents are by far the most influential factor in the development of their sons' and daughters' sex behavior.

> Parents have two major tasks in promoting their child's sex-typing. The first is tuition, i.e., teaching the child appropriate sex-typed responses through rewards and punishments, and guiding his behavior. The second is providing a model.
>
> Fortunately, most parents can perform these tasks without great difficulty because they themselves have absorbed and incorporated sex-appropriate characteristics, responses, and attitudes. They expect different responses from their sons and daughters and, from early childhood properly reward and encourage sex-appropriate responses . . . . Sex-inappropriate behavior, and attempts to imitate opposite-sex responses, are punished and discouraged (Mussen, 1962, p. 436).

Block found, in her research on families (1973), that the parents who show true androgynous life styles provide the healthiest and most enriching environment for their children. Both mother and father are forceful, ambitious, gentle, nuturant, and both share family responsibilities.

There are evidences that sex-typing can be quite detrimental, especially to the traditionally masculine boys who are vulnerable to poor adjustment when they reach the adult world. High masculine boys show acceptance and adjustment in adolescence because their high masculinity reinforced their behavior, whereas the low masculine boys had to compensate for their lack of masculinity by exhibiting more interrelation and intellectual skills. Once in the adult world the high masculine boys are expected to maintain these skills which they have never developed. The low masculine boys have less adjustment to make because these skills were mastered at a much younger age (Mussen, 1962).

High femininity in women has been associated consistently with high anxiety, low self-esteem, and low social acceptance (Bem, 1975b; Cosentino, 1964; Heilbrun, 1973; Sears, 1970); high masculinity has been associated with high anxiety, high neuroticism, and low self-acceptance (Bem, 1975b; Hartford, et al., 1967; Mussen, 1962). In addition, research has found that greater intellectual development has been directly correlated with cross-tying or androgyny; i.e. femininity in boys and masculinity in girls (Bem, 1974; Hartford, et al., 1967; Heilbrun, 1973; Maccoby, 1966). It also has been found that high masculine/low feminine males tend to be more conservative in their attitudes toward the equality of the sexes; and high feminine/low masculine females also tend to advocate conservative views about sex roles (Spence, Helmreich, and Stapp, 1975).

In a study of sex role orientation of male art students, MacKinnon states:

> . . . creative males give more expression to the feminine side of their nature than do less creative men. They score relatively high on femininity, which indicates rather an openness to their feelings and emotions, a sensitive intellect and an understanding self-awareness and wide-ranging interests including many which in the American culture are thought of as more feminine (1976, p. 82).

Research conducted by Kagan (1964) and Kohlberg (1966) has shown that the sex-typed individual avidly exhibits behavior according to the sex role standard set by society and rejects behavior that does not comply, therefore, making adjustment in a changing society very difficult.

Research has attempted to support the hypothesis that an individual can be both masculine and feminine, both instrumental and expressive, and both agentic and communal (Heilbrun, 1973). For example, one can be a disciplinarian and empathic within one particular incident. One who displays an equal balance of masculine and feminine behavior characteristics is said to be androgynous.

The term "androgyny" is of ancient Greek origin, "andro" meaning male and "gyne" meaning female; but the concept itself is relatively new in science. In the context of personal behavior, androgyny refers to having one's own unique blend of temperament and behavior, without being categorized in terms of the traditional masculine and feminine sex role characteristics. Sex role orientation studies have measured individuals as being masculine or feminine with those subjects falling between--perhaps the healthiest and best adjusted--deliberately and systematically ignored (Bem, 1975a). The measurement of psychological androgyny now allows one to concentrate on masculine and feminine similarities rather than differences (Bem, 1974).

Heilbrun (1973) sees the concept "androgyny" as essential in an individual's development.

> I believe that our future salvation lies in a movement away from sexual polarization and the prison of gender toward a world in which individual roles and the modes of personal behavior can be freely chosen. The ideal toward which I believe we should move is best described by the term androgyny. Androgyny seeks to liberate the individual from the confines of the appropriate (Heilbrun, 1973, p. ix).

Bem (1975a) argues that the three components in the traditional concept of sexual identity--sexual preference, sex role identity, and gender identity--are no longer valid nor acceptable. Further, she suggests that the ideal or healthy personality will be formed only when: (1) the sexual preference of an individual is completely independent of personality development; (2) an individual displays the positive behaviors and traits of both masculinity and femininity; and (3) the constraints of one's gender are freed. Heilbrun (1973) supports Bem in part by suggesting that androgyny will act as a reconciliation between the sexes; it will provide a more balanced, full range of human experience open to individuals as they choose their places without regard to propriety, custom, and/or gender.

Bem realizes that the success of the integration of masculinity and femininity is based on several variables and/or barriers.

> Although I believe that it is possible for people to be both masculine and feminine, I also believe that traditional sex roles prevent this possibility from ever becoming a reality for many individuals. Over the last few years, the Women's Liberation Movement has made us all aware of the many ways we, both men and women, have become locked into our respective sex roles. As women, we have become aware of the fact that we are afraid to express anger, to assert our preferences, to trust our own judgments, and to take control of situations. As men, we have become aware of the fact that we are afraid to cry, to touch one

> another, to own up to our fears and weaknesses. My goal over the last few years has been to try to demonstrate that traditional sex roles do restrict behavior in important human ways (Bem, 1975b, p. 60).

Integrating traditional masculinity and femininity creates an equilibrium, with each being tempered by the other. A truly androgynous personality is evolved, contributing to a more effective, healthier, functioning human being. This androgynous personality, therefore, would surpass the over-emphasized traditional masculine and feminine characteristics and would display the very best of what masculinity and femininity have come to represent (Bem, 1975c).

Ben clearly states that more androgynous life styles can lead to fuller development of individuals in terms of human satisfactions and fulfillments. It is at this point in society that one should be encouraged and reinforced for expressing both masculine and feminine personality traits. Psychological tests have reflected the androgynous individual (one who is both masculine and feminine, both independent and dependent, both assertive and yielding) as better able to cope effectively with diverse situations and better able to accept more liberal as well as a wider range of values and attitudes of others which may be in contrast to one's own values and attitudes (Bem, 1975c; Heilbrun, 1973).

In sex role orientation, perhaps an even more encompassing concept to use when defining the integration of masculinity and femininity is "synergy." Webster (Third New International Dictionary, 1969) defines synergy as "the combined action such that the total effect is greater than the sum of two or more effects independently."

Therefore, the most healthy, developed individual, the synergistic individual, resolves the dichotomy between masculinity and femininity by fusing their separateness into a stronger identity. The process is defined as synergistic action.

In social sciences, the term synergy was used and developed by Ruth Benedict and then later interpreted by Abraham Maslow. Benedict studied a diverse sample of cultures, including secure and insecure and selfish and unselfish in an attempt to discover a comparative sociology. She could not accept the fact that cultures were said to be unique and idiosyncratic. She proved that there were generalizations in each culture that would integrate them, placing them on a continuum instead of regarding each as unique (Maslow, 1971).

Benedict replaced the terms "secure/insecure" and "selfish/unselfish" with terms "high synergy" and "low synergy" as a means of introducing a clearer description of her synergy theory--the fusing of a dichotomy. The integration of this dichotomy has a direct relationship to Maslow's self-actualization theory:

> In highly developed, psychiatrically healthy people, self-actualizing people, whichever you choose to call them, you will find if you try to rate them that they are extraordinarily unselfish in some ways, and yet also that they are extraordinarily selfish in other ways . . . . Somehow the polarity, the dichotomy, the assumption that more of one means the less of the other, all this fades. They melt into each other and you have now a single concept for which we have no word yet. High synergy from this point of view can represent a transcending of the dichotomizing, a fusion of the opposites into a single concept (Maslow, 1971, p. 210).

The review of literature relating to sex role orientation suggests evidence that a synergistic or androgynous person (one who freely engages in both feminine and masculine behavior) is very closely

related to the self-actualized individual Maslow describes as "fully functioning," "fully human," and "psychologically healthy."

Attitudes as a Factor in Education Settings

The theory of belief and attitude systems which underlies this study is that of Milton Rokeach. According to this theory, each individual has a system which maintains that person's beliefs about the physical world, social world, and personal world. According to Rokeach (1968), each of an individual's beliefs vary in importance and depth and are formed by living in a society. Each belief is designed to provide one with a "stable and continuous sense of ego and group identity" (Rokeach, 1968, p. 12). Rokeach's definition of belief is:

> A belief is any simple proposition, conscious or unconscious, inferred from what a person says or does, capable of being preceded by the phrase "I believe that . . . ." The content of a belief may describe the object of belief as true or false, correct or incorrect; evaluate it as good or bad; or advocate a certain course of action or a certain state of existence as desirable or undesirable (1968, p. 113).

Within a belief system is a subsystem of attitudes. Figure 1 is a graphic presentation of this. As shown in Figure 1, all attitudes are composed of several beliefs; however, not all beliefs are attitudes, which reinforces Rokeach's theory that each individual possesses hundreds and thousands of beliefs, but only considerably fewer attitudes. He hypothesizes individuals have even fewer values which are derived from beliefs and attitudes.

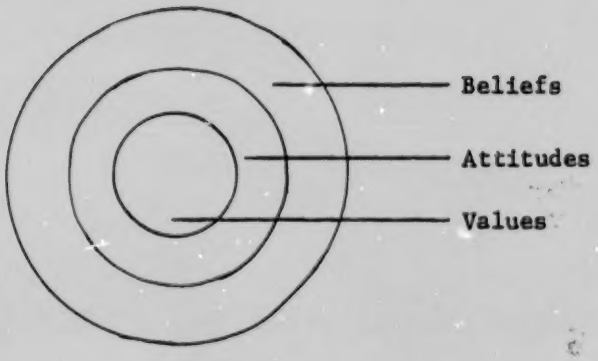

FIGURE 1

COMPOSITION OF A BELIEF SYSTEM

The concept of attitudes is a basic element in psychology of personality. The concept can be variously defined depending on the context and/or author. For purposes of this study Rokeach's definition is used:

> An attitude is a relatively enduring organization of beliefs around an object or situation predisposing one to respond in some preferential manner (1968, p. 112).

All attitudes are expressed in terms of a variety of preferential responses: yes, no; pro, con; like, dislike; etc. However, not all beliefs are necessarily expressed in preferential response. Beliefs may be neutral, therefore not all beliefs are attitudes (Rokeach, 1968). The preferential response of each attitude is determined by the strength of an individual's beliefs, and therefore it is possible for an individual to express strong negative feelings about something which is perfectly acceptable in society. For instance, "I realize that there should be true equality in the job market; but I would never hire a woman as a supervisor over men." Rokeach explains in more detail:

> . . . the preferential response may be directed toward the maintenance or preservation of the attitude itself. A person with a particular attitude is predisposed selectively to perceive, recognize, judge, interpret, learn, forget, recall, and think in ways congruent with his attitude; such selective responses, while mediated by an attitude, are not necessarily responses directed toward the attitude object or situation itself (1968, p. 122).

Attitudes are part of the repertoire of human behavior (Wagner and Sherwood, 1969). Usually it is only from behavior that we can determine that an individual has a particular attitude. Essentially, attitudes are caused or developed from characteristics and consistent methods of behavior toward some issues, objects and incidents over a period of time (Campbell, 1950; Hovland, Janis, and Kelley, 1953, Sherif, Sherif, and Nebergall, 1965).

Not all attitudes play an equally prominent role in determining one's behavior. An attitude may vary in importance among different individuals or within one individual depending on the degree of ego involvement (Sherif, Sherif, Nebergall, 1965; Eagly, 1967). Attitudes toward objects not immediately related to self may be easier to change than attitudes that involve prejudices based on, for example, home or school training (Bloom, 1964). However, one of the most important factors in the development and stability of two or more individuals differing in attitudes is persuasive communication (McGuire, 1968). Since attitudes about sex role are based on training and experience in both home and school, they may be particularly resistant to change without deliberate effort.

Teachers can create environments which facilitate learning. Values and attitudes have been identified as the primary emphasis of affective outcomes in student education. In a study on school-related

attitudes and their implications for a student's affective educational progress Khan and Weiss clearly stated:

> . . . whatever else may transpire in the school, the teacher has the most central role in the development of students' affective responses. This role stems from . . . his attitude toward the group and each child, and his educational values and beliefs (1973, p. 786).

Therefore, a teacher's attitudes become extremely important in the development of the student's expectations and have a great impact on a student's emerging self and intellectual output (Boynton, et al., 1934). This is supported by the findings of Symonds and Dudek (1956) who concluded that effective teachers were inclined to be friendly, warm, supportive, and skilled at communication. These teachers who had democratic and student-centered classrooms were more open, spontaneous, and adaptable to change.

Very few specific classroom implications have resulted from the investigation of teachers' affective behavior. Khan and Weiss (1973) direct the blame to "paucity of well-conceptualized and designed research on attitudes in the educational setting" (p. 788).

There is evidence that the problem of sex stereotyping is prevalent in vocational education programs and the world of work; therefore, legislation has been enacted to solve this problem. However, the sex stereotyping in vocational education will continue to exist if teachers perpetuate sex-typed attitudes and display sex-typed behaviors.

Sex Stereotyping in Vocational Education

Although most recent data on sex stereotyping has been related to the position of women, it is the intent of this study to examine

both male and female's involvement in sex stereotyping as evidenced in vocational education.

Vocational education has the responsibility to meet the needs of both female and male students in choosing careers and life roles. This is particularly difficult when the roles of males and females in society are changing rapidly. Meeting these life-related needs of young people can be accomplished by broadening the appeal of programs to secure voluntary male and female enrollments and by encouraging acceptance of the role change. However, statistics show that current programs in vocational education exhibit restraint in opening all programs to both men and women (Steele, 1974). Data indicate that at present vocational education appears to be a male dominated profession, even though 49 per cent of the total vocational education teachers are female and over half of the students in vocational education are females. It has been shown in studies that female students in vocational education are reinforced and heavily influenced to enroll in occupations directly associated with the home or traditionally accepted by society as female appropriate, such as health occupations, home economics, and office occupations. It is these areas in which female teachers predominate. In the agricultural, technical and industrial, and distributive education, male students and teachers are clearly the majority. In a survey of secondary vocational teachers (Osso, 1974), Health, Education, and Welfare reported the following percentages:

Teachers of agriculture	- 100% male
Teachers of technical and industrial	- 89% male
Teachers of distributive education	- 77% male
Teachers of health occupations	- 89% female

Teachers of home economics - 98% female
Teachers of office occupations - 72% female

Sites (1975) explains that the higher percentage of female vocational enrollees is accounted for by the students enrolled in home economics and business or office occupations, all of which are traditionally female programs. Sites also points out that in vocational education, few girls enroll in shop, and few boys study home economics, although there has been some progress in this area.

The trend continues to be reinforced when, as Kievet (1974) notes, teachers channel boys and girls into sex appropriate/traditional roles, which in turn causes a restriction in the male or female future occupational/career options. Vocational education programs continually prepare boys and girls for traditional jobs. The evidence is shown in the enrollments in vocational education; it clearly differentiates the traditional male and female course offerings (Steele, 1974). Table 1 shows that not only are girls grouped in a much narrower range of vocational programs than boys, the areas in which girls are concentrated frequently are shown to have a higher teacher/student ratio than the areas in which boys predominate. Consequently, it is possible that females have less opportunity for interaction with teachers, thereby making it more difficult for the teacher to prepare students for the rapidly expanding opportunities in the world of work.

The woman who becomes an electrician is perceived as being deviant because of her non-conformity to establish cultural patterns. In Peterson's study on societal patterns, she states:

TABLE 1

VOCATIONAL EDUCATION PROGRAMS PERCENTAGE DISTRIBUTION OF ENROLLMENT BY SEX, BY TOTAL NUMBER OF TEACHERS, BY AVERAGE TEACHERS PER STUDENT, AND BY TEACHERS PER MALE AND FEMALE ENROLLMENTS IN 1972[a]

Occupational Areas	Percentage Male[b]	Percentage Female[b]	Total Teachers[b]	Average Students Per Teacher[c]	Total Teachers Per Male Enrollments[b]	Total Teachers Per Female Enrollments[a]
Agriculture	94.6	5.4	13,270	49.2	12,553.4	716.6
Distribution	54.7	45.3	13,795	67.5	7,545.9	6,249.1
Health	15.3	84.7	14,552	23.1	2,226.4	12,325.5
Consumer and Homemaking	7.9	92.1	34,820	90.9	2,751.0	32,069.0
Home Economics--Gainful	13.9	86.1	6,727	82.9	935.0	5,792.0
Office	23.6	76.4	52,662	44.6	12,428.3	40,233.7
Technical	90.2	9.8	16,820	20.0	15,171.6	1,648.4
Trades and Industry	88.3	12.2	65,105	36.8	57,487.7	7,617.3
Total	AV. 44.6	AV. 55.4	217,751	AV. 47.8	111,099.4	106,651.6

[a]Includes unduplicated enrollments and enrollments below grade 9.

[b]Source: Division of Vocational and Technical Education, Trends in Vocational Education Fiscal Year 1972 (Washington: Office of Education, Department of Health, Education, and Welfare, June, 1973), p. 7.

[c]Source: Division of Vocational and Technical Education, Summary Data Vocational Education Fiscal Year 1972 (Washington: Office of Education, Department of Health, Education, and Welfare, May, 1973), p. 3.

> Aptitudes tests have shown repeatedly that girls have as wide variety of aptitudes as boys and vocational testing has proven that women can perform as well as men in almost all jobs and better in some but women undoubtedly seemed to be geared to the traditional feminine jobs. Society has narrowed women's self-image, self-growth, and thus, opportunities by establishing rigid attitudes about the female role (1973, p. 197).

Kievet (1974) narrows society to a smaller segment--the teacher. She believes that teachers should reexamine their support and practices of guiding boys and girls into limited range of jobs, occupations, and careers.

A point of interest is that 72.2 per cent of all 1972-1973 post secondary vocational education enrollees will pursue employment in their field of vocational study (Osso, 1974). Consequently sex biasing and sex stereotyping will continue to flourish in future vocational education programs unless educators re-evaluate their attitudes and behaviors concerning the issue on hand.

In the world of work, women tend to be concentrated in just a few jobs. In 1970, one-half of all women workers were employed in just seventeen occupations, while one needed sixty-three occupations to include half of all male workers. In 1973, the median annual earnings of men who work full time, year-round was $11,186. That same year, earnings for women were $6,335 (Osso, 1974).

There has been a significant increase in opportunities for women and men to enter non-traditional occupations. To be able to take advantage of these opportunities, however, a woman or man must acquire marketable skills. Current vocational education programs aimed at providing skill training and career education programs aimed

at increasing career awareness are not adequately meeting this challenge.

During the Fiscal Year 1975, the Education Subcommittee of Health, Education, and Welfare worked closely with the Health, Education, and Welfare personnel in the development of the regulation of Title IX of the Education Amendments of 1972. Because of the intense agitation in recent years over the role of women in the work force, the subcommittee has been devoting a major portion of its time to investigating vocational career education of women.

Vocational education legislation is currently being developed to eliminate sex stereotyping. The major provisions of the Education Amendments of 1976 are as follows:

1) . . . to require the membership of women on the advisory councils who are knowledgeable about employment and training programs . . . .

2) . . . requires the States to set out policies and procedures to be used to eliminate sex stereotyping and to set out the types of programs which will be offered to overcome sex bias and sex stereotyping . . . .

3) . . . to prepare women for employment in job fields which have been traditionally considered limited to men . . . .

4) . . . to fund programs encouraging the participation of both male and female students in courses designed to emphasize their joint responsibilities as wage earners and family members.

5) . . . requires the collection of data on students according to their sex . . . .

6) . . . to permit the expenditure of funds for the development of curriculum materials free of sex stereotyping . . . .

> 7) . . . an appointed employee should review and report on progress in eliminating sex bias and sex stereotyping in all vocational education programs in the State . . . (Knox, 1975, p. 174).

It is the intention of these amendments to broaden the appeal of vocational education programs to secure voluntary male enrollments as well as female enrollments. All vocational technical programs will have to give evidence of increasing numbers of enrollees of both sexes.

Evidence shows that sex stereotyping is prevalent in vocational education programs, teacher's classrooms, and the world of work. Students are an influential and integral part of this sex stereotyping in the educational system. While legislation does facilitate the elimination of sex stereotyping in vocational education, the impetus to change will come from the liberation of attitudes of individuals, both male and females.

CHAPTER III

DESIGN OF THE STUDY

This study was undertaken to determine the relationship between sex role attitudes of vocational educators and their stated beliefs about their own sex role orientation.

The following null hypotheses were tested in this study:

Hypothesis 1:

There will be no statistically significant difference between sex role orientation and sex role attitudes.

Hypothesis 2:

Regardless of sex role orientation, there will be no statistically significant difference between men's and women's sex role attitudes.

Selection of Sample for the Study

The sample for this study consisted of vocational educators in Pennsylvania. The complete membership list of the Pennsylvania Vocational Association was the source of a cross-section sample of individuals in all vocational programs and positions. The following materials were mailed to all members who were asked to respond anonymously:

1. A cover letter describing the study, asking for the completion of an enclosed questionnaire (see Appendix B).
2. A three-part instrument or questionnaire: a personal data form, a sex role inventory, and a sex role attitude scale (see Appendices C, D and E),
3. A self-addressed prepaid return envelope for completed questionnaires.

Of the 739 individuals contacted to participate in the study, 522 responded resulting in a 70.63 per cent return. However, because of incomplete data, only 431 questionnaires were used in the study.

Instrumentation for the Study

Several types of information were collected in this study: sex role orientation as measured on the Bem Sex Role Inventory, attitude scores determined by the Osmund Sex Role Attitude Scale, and subject's individual characteristics provided by a personal data form (see Appendices C, D and E for copies of instruments).

The Bem Sex Role Inventory

The Bem Sex Role Inventory (referred to hereafter as BSRI) was developed by Sandra L. Bem, Stanford University, to measure three separate sex roles for each respondent: masculinity, femininity, and androgyny. The inventory contains several features that separate it from other sex role inventories. Previous inventories have measured masculinity or femininity of an individual, completely overlooking the possibility that an individual can and does exhibit both male and

female traits. It was Bem's intent to design an instrument that would include two scales: a masculine scale, as well as a feminine scale resulting in a score in both domains for each individual. Each scale comprised twenty personality characteristics. Item selection was designed to be positive in either traditionally masculine or feminine mode. Items were selected by a panel of male and female judges as being significantly more desirable for a man or significantly more desirable for a woman ($p < .05$). Individual participants are asked to rate each item on a Likert scale from one to five (1 = never or almost never true, and 5 = always or almost always true) depending how accurately each characteristic reflected his/her personality. Note these items in column one and two of Table 2. The BSRI includes only those characteristics which were sex-typed socially desirable and not on the basis of differential endorsement by males and females. It was based on the assumption that those persons testing as sex-typed were individuals that adopted those behaviors that were deemed accepted by society as appropriate to their own biological sex. In addition to measuring masculinity and femininity, the BSRI measures the degree of androgyny in each personality depending on the value assigned to each item characteristic. Androgyny is defined as the subject's t-ratio for the difference between masculine and feminine assignment; therefore, the closer the score is to zero the more androgynous the individual. An androgynous sex role orientation is represented by the equal endorsement of both masculine and feminine personality characteristics.

Bem (1974) reports that the interrelation analysis on the BSRI indicates that it is acceptable as a measuring instrument. Both

TABLE 2

THE MASCULINE, FEMININE, AND NEUTRAL ITEMS
ON THE BEM SEX ROLE INVENTORY

Masculine Items	Feminine Items	Neutral Items
Acts as a leader	Affectionate	Adaptable
Aggressive	Cheerful	Conceited
Ambitious	Childlike	Conscientious
Analytical	Compassionate	Conventional
Assertive	Does not use harsh language	Friendly
Athletic	Eager to soothe hurt feelings	Happy
Competitive	Feminine	Helpful
Defends own beliefs	Flatterable	Inefficient
Dominant	Gentle	Jealous
Forceful	Gullible	Likable
Has leadership abilities	Loves children	Moody
Independent	Loyal	Reliable
Individualistic	Sensitive to the needs of others	Secretive
Makes decisions easily	Shy	Sincere
Masculine	Soft spoken	Solemn
Self-reliant	Sympathetic	Tactful
Self-sufficient	Tender	Theatrical
Strong personality	Understanding	Truthful
Willing to take a stand	Warm	Unpredictable
Willing to take risks	Yielding	Unsystematic

masculinity and femininity scores were reported as empirically and conceptually independent (average r = -.03). The t-ratio was internally consistent (average a = .86), reliable over a four week interval (average r = .93) and uncorrelated with the tendency to describe oneself in a socially desirable direction (average r = -.06).

BSRI contains a fourth scale that involves only those personality characteristics that are neutral with respect to sex. These items are listed in column three of Table 2 and were inserted in the measure to serve as a neutralizer for the masculinity and femininity scales assuring the investigator that the general tendency of endorsement was not being trapped.

For purposes of this study, the scoring procedures used on the BSRI differ slightly from those suggested by Bem (1974). These revised procedures and the rationale underlying them are presented in Chapter 4 of this study.

Sex Role Attitude Scale

Sex Role Attitude Scale (referred to hereafter as SRAS), designed by Marie Osmund and Patricia Martin of Florida State University, provides a rather unique method of measuring the degree of sex-stereotyping present in both males and females. Many attitudinal surveys have consistently indicated that males and females differ in their sex role attitudes, but very few have researched the degree of sex-typing and sex-stereotyping; therefore, it was the designers' intent to develop an instrument to explore the variations in attitudes by sex on a traditional/nontraditional sex role attitudinal continuum.

The traditional end of this continuum scale is based on "polar, dichotomous conceptions of the nature and roles of men versus women." The nontraditional end, however, is characterized by "flexible and dynamic transcendence of sex role constraints not specified by sex." This equality/inequality continuum is interpreted as the attitude that "women belong in the home" which is consistently labeled "sexist" or "traditional"; and the attitude that women should have equal opportunities to men in the work force which is labeled systematically as "liberal" or "nontraditional."

The SRAS is divided into four areas of concerned societal issues that exist mainly between sexes:

1. Familial roles of females and males.
2. Extrafamilial roles of each sex.
3. Stereotypes of male/female characteristics and behaviors.
4. Social change as related to sex roles.

Each respondent was asked to rate each item on a Likert scale from 1 to 5 (1 = never or almost never true, to 5 = always or almost always true) depending on the degree of agreement with each of the thirty-two statements.

Osmund and Martin reported the t-tests showing that thirty-one of the thirty-two statements distinguished between the upper and lower quartiles of the sample with associated probabilities of .001 or less. Item 24 (Battle of Sexes) did not meet this criterion ($.01 < p < .025$) and therefore was omitted and recalculated producing the reliability coefficient as .88 (Cronbach's Coefficient Alpha). The validity of

the scale's responses to thirty of the thirty-two was significantly associated ($p < .001$).

Because of the nature of this research an item from Osmund and Martin's original sex role attitude scale was deleted and a fifth subscale was added. The additional subset of eight items measures the attitudes of vocational educators toward the effects of the changing role of males and females in the classroom and in the world of work. Data relative to this subscale are presented in the findings chapter.

A pilot study was completed several weeks prior to actual project implementation for the purpose of testing the validity and reliability of the instruments. The pilot project involved forty graduate students and teacher educators in Home Economics Education at The Pennsylvania State University. Table 3 presents the statistical treatments employed in this study.

TABLE 3

STATISTICAL ANALYSIS

	Data	Statistical Treatment
Description of Sample	Bem Sex Role Inventory Scores	Statistical Summary
	Sex Role Attitude Scale Subscores and Total	Frequency
	Personal Data	Pearson Product Moment Correlation
Analysis of Instruments		Likert Attitude Scale Analysis
Hypothesis 1	Bem Sex Role Inventory Synergy Score as Criterion	Analysis of Variance
	Sex Role Attitude Scale Subscores and Total	
Hypothesis 2	Bem Sex Role Inventory Synergy Score as Criterion	Analysis of Variance
	Sex Role Attitude Scale Subscores and Total	

CHAPTER IV

FINDINGS OF THE STUDY

The major purpose of this study was to investigate the relationship between sex role attitudes of vocational educators and their own sex role orientation. Instrumentation for the study included the Bem Sex Role Inventory (BSRI) and a Sex Role Attitude Scale (SRAS). A personal data sheet provided a descriptive profile of the sample of Pennsylvania vocational educators.

The Sample

Seven hundred and thirty-nine vocational educators who were members of the Pennsylvania Vocational Association were contacted by mail to participate in this study. The names and addresses of the participants were obtained from a membership list furnished by the Pennsylvania Vocational Association. Although 522 (70.63 per cent) of the subjects returned the questionnaires, only 431 (58.32 per cent) of these were usable. Of the 91 not used, 8 were returned late, 13 were returned with incomplete data and 70 were returned unanswered by individuals who did not wish to participate. Table 4 shows the program areas of the entire population solicited as well as of the sample returned. In addition, this table indicates the percentage of the sample in each program area compared to the percentage of the total population. One will note that proportionately, administrators have

the highest rate of return; 92.06 per cent of the administrators returned completed questionnaires and 75 per cent return rate for home economists ranks second. Individuals in the area of manpower had the lowest rate of return, that is, 20 per cent of the number contacted.

TABLE 4

POPULATION, SAMPLE, AND PERCENTAGE OF TOTAL SAMPLE OF PRINCIPAL TEACHING AREAS

Principal Teaching Responsibility	Population	Sample	Percentage of Total Sample
Administration	63	58	92.06
Agriculture	115	52	45.28
Business and Office	44	23	52.27
Distributive	60	15	25.00
Guidance	29	17	58.62
Health Occupations	51	33	64.71
Home Economics	64	48	75.00
Industrial Arts	22	5	22.73
Manpower	5	1	20.00
New and Related Services	10	4	40.00
Technical	30	15	50.00
Trade and Industrial	286	103	36.01
Others/Unclassified	27	57	
TOTAL	739	431	58.32

Demographic Data

Data on demographic variables are summarized in Table 5 for both the entire sample (n = 431) and the portion of the sample selected for hypothesis testing in this study (n = 224).

In both samples of 431 and 224, there are approximately 3:1 ratios of males to females. The typical respondent was a male teacher at the secondary school level, caucasian, married with spouse working full-time outside the home. This average respondent had 13.7 years of

TABLE 5

DESCRIPTIVE DATA: TOTAL SAMPLE AND SAMPLE USED FOR HYPOTHESIS TESTING

	Total Sample n = 431		Hypothesis Testing n = 224	
	f	Percentage	f	Percentage
Sex:				
Male	304	70.53	163	72.77
Female	127	29.47	61	27.23
Race:				
White	406	94.20	210	93.75
Black	13	3.02	5	1.23
Hispanic	0	0.00	0	0.00
Native American	3	.70	3	1.34
No Response	8	1.86	6	2.69
Married:				
Yes	355	82.37	190	84.93
No	73	16.94	34	15.21
No Response	3	.70	0	0.00
Spouse Work Outside Home:				
Yes	227	52.67	127	56.70
No	131	30.39	63	18.13
No Response	73	16.94	34	18.18
If yes:				
Full-time	170	77.27	92	72.44
Part-time	50	22.73	35	27.55
Certification:				
Yes	349	80.97	182	81.25
No	73	16.94	37	16.52
No Response	9	2.09	5	2.23
Education:				
No Degree	50	11.60	33	14.73
Bachelor's Degree	101	23.43	48	21.43
Master's Degree	123	28.54	60	26.79
Master's Plus 30 Credits	93	21.58	48	21.43
Dissertation in Progress	18	4.18	10	4.46
Doctorate	46	10.67	26	11.61
Position:				
Administration	78	18.10	36	16.07
Advisory Committee	0	0.00	0	0.00
Board Member	0	0.00	0	0.00

TABLE 5 (Continued)

	Total Sample n = 431		Hypothesis Testing n = 224	
	f	Percentage	f	Percentage
Position (Continued):				
Consultant	9	2.09	6	2.68
Coordinator	44	10.21	19	8.48
Counselor	11	2.55	5	2.23
Supervisor	14	3.25	8	3.57
Teacher	182	42.23	101	45.09
Teacher Educator	39	9.05	17	7.59
Other	54	12.53	32	14.29
Principal Teaching Responsibility:				
Administration	58	13.46	25	11.16
Agriculture	52	12.06	28	12.50
Business and Office	23	5.34	13	5.80
Distributive Education	15	3.48	12	5.36
Guidance	17	3.94	8	3.57
Health Occupations	33	7.66	15	6.70
Home Economics	48	11.14	25	11.16
Industrial Arts	5	1.16	2	.89
Manpower	1	.23	1	.45
New and Related Services	4	.93	1	.45
Technical	15	3.48	6	2.68
Trade and Industrial	103	23.90	55	24.55
No Response/Others	57	13.23	33	14.73

teaching experience and 12.4 years of work experience in the area of teaching.

Sex Role Inventory

This study used Bem's theory of sex role orientation, but the scoring of the Bem's Sex Role Inventory (BSRI) has been altered somewhat. The 40 items designated as masculine or feminine in the BSRI are considered positive in value (Bem, 1974). For purposes of this study, item 20--"masculine" and item 40--"feminine" were replaced with two items from Bem's neutral scale. The items used as replacements were item 51--"adaptable" and item 57--"tactful." Whereas Bem (1974) suggests the use of a score of difference between masculinity and femininity scores, this study used a combined score from the 40 items. A high total score, which results from high masculinity and high femininity scores, is referred to as a synergistic role orientation. A low total score is referred to as a sex-typed role orientation. Table 13 found in Appendix F indicates the mean score, standard deviation, and item-total score correlation for the 40 items of the BSRI used to derive subjects' sex role orientation.

The range of scores on the BSRI was 113-180 out of a possible 40-200. The mean score for the total sample was 151.130 with a standard deviation of 11.838 (see Table 6). Using the revised scoring procedures for the BSRI the reliability of the instrument was established as 0.825. For purposes of comparison Table 6 presents relative data on the scoring procedures for the BSRI.

TABLE 6

DESCRIPTIVE INFORMATION FOR ALTERNATIVE SCORING OF BSRI (n = 431)

	Mean	Standard Deviation	Standard Error	Mean Inter-Item Correlation	Coefficient Alpha Index of Reliability
Revised Scoring Procedures (40 items)	151.130	11.838	4.946	.106	.825
Masculine Scale (20 items)	78.420	8.358	3.246	.220	.849
Feminine Scale (20 items)	72.710	7.472	3.413	.159	.791

For hypothesis testing in this study, the BSRI was used as criterion measure. Subjects were ranked using the revised scoring procedures. Two samples representative of the upper and lower quartile of the distribution were selected for comparison of vocational educators' attitudes. The upper quartile is henceforth referred to as representing synergistic role orientation, the lower quartile as sex-typed role orientation. Descriptive data on the two subsamples are presented in Table 7. Table 8 presents data comparing performance on the BSRI.

Sex Role Attitude Scale

The Sex Role Attitude Scale (SRAS) as developed by Osmund and Martin (1975) consists of 32 items on a Likert-type scale. Dichotomous differentiation and typing of social roles on the basis of sex is at one end; at the other extreme is nondifferentiation and/or nontyping of roles on the basis of sex. Items were assigned a value of 5 for a traditional response through the continuum to a value of 1 for a non-traditional response. Table 14 in Appendix G indicates the direction of scoring for individual items.

For purposes of this study, one of the Osmund and Martin items was dropped and an eight item subscale called "effects of changing role on classroom and the world of work" was added. For each subject five subscores and a total score on the SRAS were generated. Table 9 presents descriptive data for the subscores and the total score. Table 10 presents the correlation matrix for the SRAS subscores.

TABLE 7

DESCRIPTIVE DATA ON SAMPLES SELECTED FOR HYPOTHESIS TESTING

	Sex-Typed Sample n = 110		Synergistic Sample n = 114	
	f	Percentage	f	Percentage
Sex:				
Male	90	82	73	64
Female	20	18	41	36
Race:				
White	107	97	103	90
Black	1	1	4	4
Hispanic	0	0	0	0
Native American	0	0	3	3
No Response	0	0	6	5
Married:				
Yes	93	85	97	85
No	18	16	16	14
No Response	0	0	0	0
Spouse Work Outside Home:				
Yes	58	53	69	61
No	34	31	29	25
No Response	18	16	16	14
If yes:				
Full-time	38	66	54	78
Part-time	20	34	15	22
Certification:				
Yes	95	86	87	76
No	13	12	24	21
No Response	2	2	3	3
Education:				
No Degree	17	15	16	14
Bachelor's Degree	31	28	17	15
Master's Degree	26	24	34	30
Master's Plus 30 Credits	20	18	28	25
Dissertation in Progress	5	5	5	4
Doctorate	12	11	14	12
Position:				
Administration	16	15	20	18
Advisory Committee	0	0	0	0
Board Member	0	0	0	0

TABLE 7 (Continued)

	Sex-Typed Sample n = 110		Synergistic Sample n = 114	
	f	Percentage	f	Percentage
Position (Continued):				
Consultant	5	5	1	1
Coordinator	9	8	10	9
Counselor	2	2	3	3
Supervisor	2	2	6	5
Teacher	62	56	39	34
Teacher Educator	5	5	12	11
Other	10	9	22	19
Principal Teaching Responsibility:				
Administration	12	11	13	11
Agriculture	20	18	8	7
Business and Office	7	6	6	5
Distributive Education	7	6	5	4
Guidance	3	3	5	4
Health Occupations	6	5	9	8
Home Economics	9	8	16	14
Industrial Arts	2	2	0	0
Manpower	0	0	1	1
New and Related Services	0	0	1	1
Technical	3	3	3	3
Trade and Industrial	27	25	28	25
No Response/Others	15	14	18	16

TABLE 8

MEAN AND VARIANCE OF SCORES ON BEM'S SEX ROLE INVENTORY

	Masculine Scale		Feminine Scale		Synergy Scale	
	Mean	Variance	Mean	Variance	Mean	Variance
Sex-Typed Males (n = 90)	70.67	47.15	65.44	35.35	136.11	40.55
Synergistic Males (n = 73)	86.74	35.06	79.11	23.57	165.85	27.55
Sex-Typed Females (n = 20)	69.25	39.27	66.95	29.21	136.20	38.69
Synergistic Females (n = 41)	84.83	32.20	80.54	33.20	165.37	25.69
Sex-Typed Sample (n = 110)	70.41	45.71	65.72	34.30	136.13	39.86
Synergistic Sample (n = 114)	86.05	34.58	79.62	27.25	165.68	26.70
Total Male Population (n = 163)	77.87	105.76	71.56	76.36	149.43	254.56
Total Female Population (n = 61)	79.72	88.40	76.08	72.74	155.80	219.96
Total Population (n = 431)	78.42	69.85	72.71	55.84	151.13	140.14

TABLE 9

DESCRIPTIVE DATA FOR SEX ROLE ATTITUDE SCALE (n = 431)

	Mean	Standard Deviation	Standard Error	Mean Inter-Item Correlation	Coefficient Alpha Index of Reliability
Subscale 1: Familial Roles	22.094	4.801	2.847	.187	.648
Subscale 2: Extrafamilial Roles	12.993	4.599	1.949	.432	.820
Subscale 3: Male/Female Nature and Behaviors	19.499	5.265	2.402	.297	.792
Subscale 4: Social Change as Related to Sex Roles	20.674	4.177	2.562	.172	.624
Subscale 5: Effects of the Changing Role on Classroom and World of Work	19.924	5.254	2.677	.263	.741
Subscale 6: Total for Subscales	95.184	19.041	5.839	.198	.906

TABLE 10

CORRELATION AMONG SCALES OF SEX ROLE ATTITUDE SCALE (n = 431)

	Subscale 1	Subscale 2	Subscale 3	Subscale 4
Subscale 2	.529			
Subscale 3	.521	.712		
Subscale 4	.535	.533	.490	
Subscale 5	.472	.493	.561	.439

The range of scores on the SRAS was 43 to 175 out of possible 39 to 195. The mean total score for the total sample (431) was 95.184 with a standard deviation of 19.041. The reliability of the instrument was calculated to be 0.906. Table 9 presents the reliability of the subscores.

Findings Related to Hypotheses

Consistent with the purpose of investigating the relationship of sex role attitudes and sex role orientation, two hypotheses were formulated. These hypotheses are presented below with a discussion of the treatment of data and findings for each hypothesis.

Hypothesis 1:

There will be no statistically significant difference between sex role orientation and sex role attitudes.

Using the five SRAS subscores and the total SRAS score, analysis of variance was computed for the two groups of subjects

selected on the basis of the BSRI. The results of this analysis are found in Table 11. Findings from these tests showed no significant differences associated with Subscales 1, 4 and 5. The F-ratio for Subscale 2, "Extrafamilial Roles," was 9.256 and a < .001 level of significance. The "Male/Female Nature and Behaviors" subscale had a F-ratio value of 6.474 with .01 level of significance. The total score for the combination of all subscales produced an F-ratio of 5.104 with a .03 level of significance.

On the basis of these findings, Hypothesis 1, which stated no difference in attitudes and sex role orientation, was partially rejected. The sex-typed and synergy groups were significantly different in attitudes toward extrafamilial roles and stereotypes of male and female nature and behaviors.

Hypothesis 2:

Regardless of sex role orientation, there will be no statistically significant difference between men's and women's sex role attitudes.

For this analysis of variance sex was used as criterion, combining sex-typed and synergistic subjects, and using the sex role attitude subscales and total. As Table 11 indicates, significant F-ratios resulted from all five subscores as well as from the total score. The F-ratios on Subscales 1, 2, 3, 4 and 6 showed a level of significance at < .001. The significance of Subscale 5 was computed at a .05 level of significance.

TABLE 11

MEANS, VARIANCES, AND F-RATIOS FOR SEX-TYPED ROLE ORIENTATION, SYNERGISTIC ROLE ORIENTATION, MALES AND FEMALES

	Sex-Typed Role Orientation (n = 110)		Synergistic Role Orientation (n = 114)		Males (n = 163		Females (n = 61)		F-Ratio	
	Mean	Variance	Mean	Variance	Mean	Variance	Mean	Variance	Role	Sex
Familial Roles	22.61	22.70	21.25	27.24	22.80	23.96	19.57	21.85	1.60	15.70[a]
Extrafamilial Roles	14.23	19.31	11.90	22.07	13.88	20.03	10.82	20.68	9.26[b]	16.24[a]
Male/Female Nature and Behaviors	20.83	21.26	18.34	34.81	20.80	23.90	16.26	30.20	6.47[b]	29.66[a]
Social Change as Related to Sex Roles	21.33	11.29	20.12	25.88	21.40	15.50	18.87	23.98	1.90	12.82[a]
Effects of the Changing Role in Classrooms and World of Work	20.43	26.36	19.66	32.21	20.53	25.39	18.72	38.14	.44	3.82[c]
Total Scale	99.42	290.06	91.28	455.34	99.40	322.37	84.25	405.89	5.10[c]	23.75[a]

[a]Significance level at .001 or less.

[b]Significance level at .01.

[c]Significance level at .05.

Women scored significantly lower than men on all subscale measures of attitudes; that is, they were less traditional in their attitudes toward sex roles.

On the basis of these findings, Hypothesis 2, which proposed no difference between men and women in sex role attitudes, was rejected. Women were less traditional than men in their sex role attitudes on all subscales.

Additional Findings

A two-factor analysis of variance was computed relating the sex and sex role orientation of the respondent to find the interaction of the two variables. Findings (see Table 12) showed a significance difference between sex and sex role orientation. It is the assumption from this interaction process that sex of the respondent is a much more powerful determinant of sex role attitudes than sex role orientation of respondent.

TABLE 12

MEANS, VARIANCES, F-RATIOS FOR MALES AND FEMALES IN THE SEX-TYPED ROLE ORIENTATION SAMPLE AND SYNERGISTIC ROLE ORIENTATION

	Sex-Typed Role Orientation				Synergistic Role Orientation				
	Males (n = 90)		Females (n = 20)		Males (n = 73)		Females (n = 41)		
	Mean	Variance	Mean	Variance	Mean	Variance	Mean	Variance	F-Ratio
Familial Roles	23.06	21.78	20.60	22.99	22.48	26.81	19.07	21.07	.41
Extrafamilial Roles	14.80	19.80	11.65	9.50	12.74	18.22	10.41	26.00	.37
Male/Female Nature and Behaviors	21.62	18.98	17.25	16.62	19.78	28.42	15.78	36.68	.06
Social Change as Related to Sex Roles	21.71	10.68	19.60	10.88	21.03	21.42	18.51	30.41	.10
Effects of the Changing Role in Classrooms and World of Work	20.64	26.03	19.45	28.05	20.38	24.91	18.37	43.49	.25
Total Scale	101.83	273.38	88.55	231.52	96.41	370.94	82.15	485.08	.03

CHAPTER V

SUMMARY AND CONCLUSION

This study explored the sex role orientation of vocational educators and their perceptions of changing sex roles in our society. Frequently sex role research has been directed to members of only one sex. However, this study investigated differences between male and female sex role orientation and attitudes to changing sex roles.

The sample for this study consisted of 431 vocational educators in Pennsylvania. For purposes of hypotheses testing, a subsample was selected and divided into a synergistic group (n = 114) and a sex-typed group (n = 110) on the basis of scores on the Bem Sex Role Inventory. The synergistic sample was composed of 73 males and 41 females with 90 males and 20 females constituting the sex-typed sample. No attempt was made to balance the subsample regarding the male and female ratio. Sex role attitudes of vocational educators were measured on the Osmund and Martin Sex Role Attitude Scale. In addition, a personal data form was completed by each respondent.

Discussion of Findings

Hypothesis 1 which stated that there will be no statistically significant differences between sex role orientation and that sex role attitudes was partially rejected. There were no statistically significant differences between the sex-typed individuals and the synergistic

individuals with regard to their attitudes about familial roles, social change as related to sex roles, and the effects of the changing role in the classroom and world of work. Sex-typed and synergistic individuals did differ in their attitudes toward extrafamilial roles and male/female nature and behaviors. On both of these scales the sex-typed individuals are more traditional than are the synergistic individuals (see Table 11).

Hypothesis 2 which stated that regardless of an individual's sex role orientation, there will be no statistically significant difference between men's and women's sex role perceptions and sex role attitudes was rejected. Data clearly indicated that women, regardless of sex role orientation level, were significantly more nontraditional in their sex role attitudes (see Table 12). Women had the lowest scores, indicating more nontraditional responses, on each of the five subscales and the total. Males and females differed the most in their attitudes about male/female nature and behaviors--Subscale 3. However, Osmund and Martin (1975) note that when constructing this instrument, they designed items in Subscale 3 to elicit more nontraditional responses for women. This may be a partial explanation for significant differences between men's and women's responses on this scale.

Sex-typed individuals and synergistic individuals have similar attitudes toward familial roles. Men and women have very similar attitudes concerning the roles of individuals in the family. It is the traditional role of home and child care that seems to confuse the nontraditional woman especially. The nontraditional woman is trapped

between her desire to succeed professionally and the cultural which tells her that such success threatens her femininity. Perhaps this is what causes a nontraditional woman to be more traditional in attitudes toward the familial roles.

The synergistic individual, as measured in this study possesses both masculine and feminine characteristics; this individual accepts and incorporates a wider range of personality characteristics and behaviors which enables that individual to perform a diverse array of behaviors (Bem, 1975c). These behaviors, as stated by Katz and Kahn (1966) and Rokeach (1973), are influenced, therefore, by that individual's attitudes.

Sex-typed individuals and synergistic individuals had similar attitudes toward familial roles, but were significantly different in extrafamilial role attitudes. The subset of items in this category were highly correlated with the strength of an individual's self concept. The subscore measures the acceptance of the opposite sex as a subordinate.

The least divergence in mean scores was found in the subscale later added to the sex role attitude scale. There was little difference in attitudes about the effects of the changing role of men and women in classrooms and world of work. Both women and men populated the traditional end of the contimuum scale.

In a recent study concerning sex role perceptions of vocational educators in North Dakota, Dittman (1976) reported that educators perceived female and male sex roles in a stereotypic view. This investigation partially supports Dittman's findings, but shows men as

exhibiting a greater degree of stereotyped sex role perceptions. This study supports the Spence, Helmreich, and Stapp (1975) theory that high masculine/low feminine males tend to be more conservative in their attitudes toward sex roles; and high feminine/low masculine females also tend to advocate conservative views about sex roles.

While some have suggested that sex role orientation does not affect an individual's attitudes, this research shows evidence that the sex of an individual and one's sex role orientation influences attitudes and further, that sex and sex role orientation operate independently in their influence upon attitudes about sex roles.

Conclusion

The review of literature for this study indicates that the field of vocational education is dominated by men and this study indicates that these men are more sex stereotyped than women. The review of literature also points out that stereotyped sex roles limit student's development in both career and personal expectations (Bem, 1975c). It is Kahn and Weiss's (1975) opinion that a teacher's attitude has a direct influence on a student's behavior, specifically a student's academic achievement.

Attitudes are developed from the result of cultural pressures. An individual is aware of what is right or should be as established by society, but behavior is the critical determining and affective factor. Consequently, it is the behavior that must be observed and changed to accelerate positive change in educational progress. Therefore, a study to investigate the relationship between teacher and student's

attitude would contribute to educational research. The vocational school receives as clients young persons already shaped by many pervasive influences. The mandate of the vocational school is to prepare these clients for the world of work and living, and to do this in a fashion which maximizes the opportunity for success. When this process involves sex stereotyped procedures, the options are limited or distorted for all. To date no study has examined closely the clients of vocational schools and specific home influences upon their attitudes toward future work and familial roles. As efforts using sex stereotyping as a criterion are directed toward the processes and outputs of vocational schools, the examination of the inputs seems justified.

It is clear that efforts on the part of women who hold non-traditional attitudes might be a key factor in eliminating sex stereotyping in vocational education and to achieve true equality for women. Efforts will have to be directed toward developing attitudes for vocational teachers that are more consistent with the actual situation of women in the world of work if vocational education is to provide career experience and education for students in programs for which they have interest, ability, and the aptitude. Educators with non-traditional views are more likely to make an impact on students and vocational education and it was a finding of this study that women are more likely to hold nontraditional attitudes. Administrators in school systems are a governing force in educational programs. Results of a survey by Sites (1974), found that 94 per cent of vocational education directors were men which is a critical statistic when considering the

finding that men hold more traditional sex role attitudes. Gillie (1974) notes that the "chauvenistic" attitude held by men toward professional women continues to be a very strong and major fighting force.

It is a finding of this study that the sex of an individual is a critical variable when investigating traditional/nontraditional attitudes. If, in fact, women are more nontraditional than men in their sex role attitudes, then perhaps women can be the change agents in education. However, regardless of sex, sex role orientation is a predictor of behavior; therefore, what is needed is a group to initiate the change now mandated by law. Safilios-Rothschild supports this assumption:

> Thus, it seems to be extremely important that there exists a significantly large number of women (and at least some men) whose values and attitudes are sexism-free as possible and who have become conscious of and sensitized to all forms of explicit or subtle expressions of sexism. But it is not necessary to change everybody's values and attitudes in order to succeed in bringing about important social change. With a significantly large and militant group of liberated women and men effectively and consistently acting as a pressure group, the behavior of persons in powerful key positions . . . and those who control the distribution of money and other resources can be changed so that they act in an equalitarian way or so that they treat women preferentially, regardless of their own personal values, attitudes, and feelings (1974, p. 6).

Perhaps, this is the starting point for change in vocational education.

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APPENDIX A

CORRESPONDENCE

April 13, 1976

Dr. Susan Weis
President
Pennsylvania Vocational Association
212 Rackley Building
University Park, Pennsylvania 16802

Dear Dr. Weis:

As a graduate student in Home Economics Education, I am undertaking a study tentatively titled "Attitudes of Pennsylvania Vocational Educators Concerning Sex Role Changes and Resulting Program Implications." I would appreciate the support of the Pennsylvania Vocational Association. This support would include your signing of the attached letter requesting subject participation and access to the Pennsylvania Vocational Association membership list.

The purpose of the study is to generate a data base for in-service programs designed to improve students' career development by the elimination of sex-stereotyping. A copy of the measures to be used is attached.

I would be willing to answer any questions you or members of your Executive Board might have about this study. Upon completion, I will make a copy of the study available to you.

Thank you in advance for your cooperation.

Sincerely,

Jill A. Eversole

Eloise Murray
Thesis Advisor

cc/enclosures:

Eloise Murray

APPENDIX B

COVER LETTER FOR STUDY

Dear PVA Member,

As a graduate student in Home Economics Education at The Pennsylvania State University, I am conducting a study of sex role attitudes of vocational education teachers in Pennsylvania. I hope that you are willing to participate in this study which is being undertaken with the knowledge and approval of the Executive Board of the Pennsylvania Vocational Association.

Most research of this nature has been directed either to females or to males resulting in significantly different findings on attitudes and making cross-sex comparison difficult as different measures have been used. Therefore, it is the intention of this study to explicitly deal with sex role attitudes and personal belief orientation of both male and female vocational teachers.

Enclosed are the research measures: a personal rating scale, a sex role attitude scale, a personal data form, and a stamped self-addressed envelope. There is nothing on any of the materials that will identify you, thereby assuring the protection of your anonymity.

I would greatly appreciate your completed materials by July 15, 1976. If for any reason you do not wish to assist me in this study, please return the questionnaires in the self-addressed envelope provided.

Thank you for your time and cooperation.

Sincerely,

Jill A. Eversole
Masters Candidate

Eloise Murray
Thesis Advisor
Home Economics Education

Susan F. Weis
President
Pennsylvania Vocational Association

Enclosures

APPENDIX C

PERSONAL DATA FORM

BACKGROUND INFORMATION: Please answer the following questions relating to you and the courses you teach.

1. Sex: _____ Male
_____ Female

2. Race: _____ White
_____ Black
_____ Hispanic
_____ Native American (Indian)
_____ Other _____

3. In total, approximately how many male students _____ and female students _____ do you have in all your classes combined?

4. How many years have you been teaching? _____

5. How many years of work experience have you had in the occupational area in which you teach? _____

6. Do you have permanent certification in your area? _____ yes
_____ no

7. If you do not have permanent certification in your area, approximately what % of the certification have you completed? _____%

8. Education: 1. _____ no degree _____ years beyond high school
2. _____ Bachelor's Degree
3. _____ Master's Degree
4. _____ Master's plus 30 credits
5. _____ Dissertation in progress
6. _____ Doctorate

9. Type of Position: _____ Administrator
_____ Advisory committee member
_____ Board member
_____ Consultant
_____ Coordinator
_____ Counselor
_____ Supervisor
_____ Teacher
_____ Teacher Educator
_____ Other (Explain) _____

10. Area of Principal Teaching Responsibility:
_____ Administration
_____ Agriculture
_____ Business and Office
_____ Distributive
_____ Guidance
_____ Health Occupations
_____ Home Economics
_____ Industrial Arts
_____ Manpower

_____ New and Related Services
_____ Technical
_____ Trade and Industrial

11. Are you married? _____ yes
_____ no

12. If married, does your spouse work outside the home? _____ yes
_____ no _____ full-time _____ part-time

13. What kind of work does your spouse do? _____

14. Geographic Location (Please write in the name of your state):
_____

APPENDIX D

BEM SEX ROLE INVENTORY

On the following page, you will be shown a large number of personality characteristics. I would like you to use those characteristics in order to describe yourself. That is, I would like you to indicate, on a scale from 1 to 5, how true of you these various characteristics are. Please do not leave any characteristic unmarked.

Example: sly

Mark a 1 if it is NEVER OR ALMOST NEVER TRUE that you are sly.

Mark a 2 if it is USUALLY NOT TRUE that you are sly.

Mark a 3 if it is SOMETIMES TRUE that you are sly.

Mark a 4 if it is OFTEN TRUE that you are sly.

Mark a 5 if it is ALWAYS OR ALMOST ALWAYS TRUE that you are sly.

Thus, if you feel it is sometimes true that you are "sly," never or almost never true that you are "malicious," always or almost always true that you are "irresponsible," and often true that you are "carefree," then you would rate these characteristics as follows:

Sly	3	Irresponsible	5
Malicious	1	Carefree	4

1	2	3	4	5
NEVER OR ALMOST NEVER TRUE	USUALLY NOT TRUE	SOMETIMES TRUE	OFTEN TRUE	ALWAYS OR ALMOST ALWAYS TRUE

1. Self reliant ___
2. Yielding ___
3. Helpful ___
4. Defend own beliefs ___
5. Cheerful ___
6. Moody ___
7. Independent ___
8. Shy ___
9. Conscientious ___
10. Athletic ___
11. Affectionate ___
12. Theatrical ___
13. Assertive ___
14. Flatterable ___
15. Happy ___
16. Strong personality ___
17. Loyal ___
18. Unpredictable ___
19. Forceful ___
20. Feminine ___
21. Reliable ___
22. Analytical ___
23. Sympathetic ___
24. Jealous ___
25. Have leadership abilities ___
26. Sensitive to the needs of others ___
27. Truthful ___
28. Willing to take risks ___
29. Understanding ___
30. Secretive ___
31. Make decisions easily ___
32. Compassionate ___
33. Sincere ___
34. Self-sufficient ___
35. Eager to soothe hurt feelings ___
36. Conceited ___
37. Dominant ___
38. Likable ___
40. Masculine ___
41. Warm ___
42. Solemn ___
43. Willing to take a stand ___
44. Tender ___
45. Friendly ___
46. Aggressive ___
47. Gullible ___
48. Inefficient ___
49. Act as a leader ___
50. Childlike ___
51. Adaptable ___
52. Individualistic ___
53. Do not use harsh language ___
54. Unsystematic ___
55. Competitive ___
56. Love children ___
57. Tactful ___
58. Ambitious ___
59. Gentle ___
60. Conventional ___

APPENDIX E

SEX ROLE ATTITUDE SCALE

SEX ROLE ATTITUDES
(Most traditional response underscored)

Please circle the letter or letters to the right of each item that best expresses your opinion about the statement in the item. SA means Strongly Agree; A means Agree; U means Undecided; D means Disagree; and SD means Strongly Disagree. Mark one choice for each item.

FAMILIAL ROLES

1. Women with children in grammar school should, if at all possible, stay at home rather than work. 1. SA A U D SD

2. Women with preschool children should not work outside their homes if at all possible. 2. SA A U D SD

3. Whoever is the better wage-earner, wife or husband, should be the breadwinner. 3. SA A U D SD

4. It is possible for women to satisfy their needs for achievement through their husbands. 4. SA A U D SD

5. Men should have more freedom to do such things as cook and care for the children, if they so desire. 5. SA A U D SD

6. A man's self-esteem is severely injured if his wife makes more money than he does. 6. SA A U D SD

7. Men should take the same amount of responsibility as women in caring for home and children. 7. SA A U D SD

8. A husband who is the breadwinner in the family should make all the important decisions. 8. SA A U D SD

EXTRAFAMILIAL ROLES

9. I would feel uncomfortable if my immediate supervisor at work was a woman. 9. SA A U D SD

10. To a great extent, women are less able to make a career commitment than are men. 10. SA A U D SD

11. Females should be encouraged to plan for a career, not just a job. 11. SA A U D SD

12. I would vote for a woman for President of the United States. 12. SA A U D SD

13. Women are less capable of making important decisions than are men.	13.	SA A U D SD
14. Men are more capable of assuming leadership than are women.	14.	SA A U D SD

MALE/FEMALE NATURE AND BEHAVIORS

15. Women generally prefer light conversations over rational discussions.	15.	SA A U D SD
16. There is considerable evidence that men, in general are a "superior species" to women.	16.	SA A U D SD
17. Women really like being dependent on men.	17.	SA A U D SD
18. Career women generally are neurotic.	18.	SA A U D SD
19. Females should go ahead and pamper males--"Tell him how great he is"--because that's a useful way to get what they want.	19.	SA A U D SD
20. Men should stop appraising women solely on the basis of appearance and sex appeal.	20.	SA A U D SD
21. Either consciously or unconsciously, most women would like to be men.	21.	SA A U D SD
22. The way men and women behave is more a result of their genetic make-up than of the way they are brought up.	22.	SA A U D SD
23. Since men have a natural urge to dominate and lead, women who challenge this actually threaten the welfare of society.	23.	SA A U D SD

SOCIAL CHANGE AS RELATED TO SEX ROLES

24. Unlike the race riots, the "battle between the sexes" will never involve violence on any large scale.	24.	SA A U D SD
25. There should be low-cost, high-quality childcare centers for working women.	25.	SA A U D SD
26. Men need liberation equally as much as women do.	26.	SA A U D SD
27. Men's clubs and lodges should be required to admit women.	27.	SA A U D SD

28. Women should get equal pay with men for doing the same jobs. 28. SA A U D SD

29. Women should have equal job opportunities with men. 29. SA A U D SD

30. Women can attain true equality in this country only through a really drastic change in the social structure. 30. SA A U D SD

31. The Equal Rights Amendment related to sex should be ratified as soon as possible. 31. SA A U D SD

EFFECTS OF THE CHANGING ROLE ON CLASSROOM AND WORLD OF WORK

32. Teaching methods are different in a class with both male and female students, than when only one sex is present. 32. SA A U D SD

33. Men and women should be encouraged to work at the same types of jobs. 33. SA A U D SD

34. Removing traditional sex-role stereotypes in occupations will result in greater human understanding between men and women. 34. SA A U D SD

35. The learning motivation of the male students is different than that of female students. 35. SA A U D SD

36. There should be much stricter enforcement of the laws against sexual discrimination in employment. 36. SA A U D SD

37. Males and females in the same classes change the course content from what it can be when only one sex is present. 37. SA A U D SD

38. Males and females in the same class causes special problems in control. 38. SA A U D SD

39. As sex ratio of students in vocational classes changes, so do the objectives of the program. 39. SA A U D SD

APPENDIX F

MEAN AND STANDARD DEVIATION OF ITEMS AND ITEM-TOTAL SCORE CORRELATION FOR THE SEX ROLE INVENTORY

TABLE 13

MEAN AND STANDARD DEVIATION OF ITEMS AND ITEM-TOTAL SCORE CORRELATION FOR THE SEX ROLE INVENTORY

Item Number	Item	Item Mean	Item Standard Deviation	Item-Total Score Correlation
1	Self-reliant	4.568	0.616	.358
2	Yielding	3.367	0.718	.231
4	Defends own beliefs	4.378	0.684	.374
5	Cheerful	4.139	0.733	.385
7	Independent	4.302	0.760	.397
8	Shy	2.501	1.059	-.022
10	Athletic	3.084	1.220	.215
11	Affectionate	3.970	0.813	.535
13	Assertive	3.622	0.828	.500
14	Flatterable	2.944	0.889	.213
16	Strong personality	4.009	0.788	.532
17	Loyal	4.629	0.563	.442
19	Forceful	3.557	0.838	.379
22	Analytical	3.993	0.754	.339
23	Sympathetic	4.107	0.719	.448
25	Have leadership abilities	4.167	0.714	.576
26	Sensitive to the needs of others	4.297	0.695	.590
28	Willing to take risks	3.805	0.856	.361
29	Understanding	4.265	0.613	.597
31	Make decisions easily	3.805	0.800	.409
32	Compassionate	4.123	0.709	.562
34	Self-sufficient	4.401	0.660	.461
35	Eager to soothe hurt feelings	3.898	0.845	.439
37	Dominant	3.109	1.053	.320
38	Soft spoken	3.251	1.052	.162
41	Warm	3.958	0.726	.570

TABLE 13 (Continued)

Item Number	Item	Item Mean	Item Standard Deviation	Item-Total Score Correlation
43	Willing to take a stand	4.181	0.711	.470
44	Tender	3.742	0.826	.486
46	Aggressive	3.508	0.970	.348
47	Gullible	2.267	0.969	.014
49	Act as a leader	4.065	0.737	.613
50	Childlike	1.545	0.804	-.024
51	Adaptable	4.104	0.692	.412
52	Individualistic	3.968	0.802	.375
53	Do not use harsh language	3.394	1.284	.181
55	Competitive	3.666	0.924	.390
56	Love children	4.425	0.782	.353
57	Tactful	3.898	0.767	.427
58	Ambitious	4.128	0.789	.386
59	Gentle	3.991	0.755	.457

APPENDIX G

MEAN AND STANDARD DEVIATION OF ITEMS AND ITEM-TOTAL SCORE CORRELATION FOR THE SEX ROLE ATTITUDE SCALE

TABLE 14

MEAN AND STANDARD DEVIATION OF ITEMS AND ITEM-TOTAL SCORE CORRELATION FOR THE SEX ROLE ATTITUDE SCALE

Item Number	Item	Item Mean	Item Standard Deviation	Item-Total Score Correlation
	Familial Roles			
1	Women with children in grammar school should, if at all possible, stay at home rather than work.	3.386	1.331	.552
2	Women with preschool children should not work outside their homes if at all possible.	4.067	1.181	.509
3	Whoever is the better wage-earner, wife or husband, should be the breadwinner.	3.198	1.310	.302
4	It is possible for women to satisfy their needs for achievement through their husbands.	2.821	1.178	.409
5	Men should have more freedom to do such things as cook and care for the children, if they so desire.	1.908	0.800	.436
6	A man's self-esteem is severely injured if his wife makes more money than he does.	2.745	1.133	.290
7	Men should take the same amount of responsibility as women in caring for home and children.	2.184	1.067	.411
8	A husband who is the breadwinner in the family should make all the important decisions.	1.786	0.798	.471

TABLE 14 (Continued)

Item Number	Item	Item Mean	Item Standard Deviation	Item-Total Score Correlation
	Extrafamilial Roles			
9	I would feel uncomfortable if my immediate supervisor at work was a woman.	1.982	0.980	.535
10	To a great extent, women are less able to make a career commitment than are men.	2.478	1.200	.489
11	Females should be encouraged to plan for a career, not just a job.	1.832	0.831	.653
12	I would vote for a woman for President of the United States.	2.464	1.102	.582
13	Women are less capable of making important decisions than are men.	1.876	0.970	.692
14	Men are more capable of assuming leadership than are women.	2.361	1.202	.687
	Male/Female Nature and Behaviors			
15	Women generally prefer light conversations over rational discussions.	2.506	1.056	.600
16	There is considerable evidence that men, in general are a "superior species" to women.	1.883	0.911	.571
17	Women really like being dependent on men.	2.869	1.043	.563
18	Career women generally are neurotic.	2.076	0.983	.655
19	Females should go ahead and pamper males--"Tell him how great he is"--because that's a useful way to get what they want.	2.149	1.012	.321
20	Men should stop appraising women solely on the basis of appearance and sex appeal.	1.991	0.905	.395

TABLE 14 (Continued)

Item Number	Item	Item Mean	Item Standard Deviation	Item-Total Score Correlation
21	Either consciously or unconsciously, most women would like to be men.	1.910	0.830	.388
22	The way men and women behave is more a result of their genetic make-up than of the way they are brought up.	2.156	1.003	.501
23	Since men have a natural urge to dominate and lead, women who challenge this actually threaten the welfare of society.	1.959	0.821	.662
	Social Change as Related to Sex Roles			
24	Unlike the race riots, the "battle between the sexes" will never involve violence on any large scale.	3.749	0.849	.199
25	There should be low-cost, high-quality childcare centers for working women.	2.421	1.230	.469
26	Men need liberation equally as much as women do.	2.076	0.943	.304
27	Men's clubs and lodges should be required to admit women.	3.756	1.096	.388
28	Women should get equal pay with men for doing the same jobs.	1.430	0.623	.510
29	Women should have equal job opportunities with men.	1.559	0.760	.615
30	Women can attain true equality in this country only through a really drastic change in the social structure.	3.097	1.157	.281
31	The Equal Rights Amendment related to sex should be ratified as soon as possible.	2.586	1.140	.458

TABLE 14 (Continued)

Item Number	Item	Item Mean	Item Standard Deviation	Item-Total Score Correlation
	Effects of the Changing Role on Classroom and World of Work			
32	Teaching methods are different in a class with both male and female students, than when only one sex is present.	2.867	1.285	.340
33	Men and women should be encouraged to work at the same types of jobs.	2.441	1.099	.546
34	Removing traditional sex-role stereotypes in occupations will result in greater human understanding between men and women.	2.310	1.058	.642
35	The learning motivation of the male students is different than that of female students.	3.023	1.128	.393
36	There should be much stricter enforcement of the laws against sexual discrimination in employment.	2.294	1.011	.559
37	Males and females in the same classes change the course content from what it can be when only one sex is present.	2.517	1.117	.385
38	Males and females in the same class causes special problems in control.	2.234	1.061	.446
39	As sex ratio of students in vocational classes changes, so do the objectives of the program.	2.237	1.036	.382